

WHAT IS CLAIMED IS:

1. A substantially pure or recombinant polypeptide comprising at least ten  
5 contiguous amino acids of the intracellular portion of SEQ ID NO: 2.
2. The polypeptide of Claim 1, wherein:
  - a) said polypeptide comprises at least 25 contiguous amino acids of the  
intracellular portion of SEQ ID NO: 2;
  - 10 b) said polypeptide is recombinant, comprising the intracellular portion of SEQ  
ID NO: 2;
  - c) said polypeptide further comprises at least ten contiguous amino acids of the  
non-intracellular portion of SEQ ID NO: 2;
  - d) said polypeptide comprises at least 25 amino acids of the extracellular  
15 portion of SEQ ID NO: 2;
  - e) said polypeptide comprises the mature SEQ ID NO: 2; or
  - f) said polypeptide is a substantially pure natural polypeptide.
3. The recombinant polypeptide of Claim 1, which:
  - 20 a) consists of the mature sequence of Table 1;
  - b) is an unglycosylated polypeptide;
  - c) is from a human;
  - d) comprises at least 40 contiguous amino acids of SEQ ID NO: 2;
  - e) exhibits at least three nonoverlapping segments of at least fifteen contiguous  
25 amino acids of SEQ ID NO: 2;
  - f) is a natural polymorphic variant of SEQ ID NO: 2;
  - g) has a length at least about 30 amino acids;
  - h) exhibits at least two non-overlapping epitopes which are specific for a  
primate DCRS5;
  - 30 i) has a molecular weight of at least 30 kD with natural glycosylation;
  - j) is a synthetic polypeptide;
  - k) is in a sterile form;
  - l) is in an aqueous or buffered solution;
  - m) is attached to a solid substrate;
  - 35 n) is conjugated to another chemical moiety; or
  - o) is physically associated with an IL-12R $\beta$ 1 polypeptide;

4. A composition of matter selected from:
- a) a substantially pure or recombinant polypeptide comprising at least two distinct nonoverlapping segments of at least six contiguous amino acids of the intracellular portion of SEQ ID NO: 2;
  - b) a substantially pure or recombinant polypeptide comprising at least 12 contiguous amino acids of the intracellular portion of SEQ ID NO: 2; or
  - c) a substantially pure natural sequence polypeptide comprising mature SEQ ID NO: 2.
5. The polypeptide:
- 1) of Claim 4a, wherein:
    - a) said distinct nonoverlapping segments:
      - i) include one of at least twelve amino acids;
      - ii) include one of at least seven amino acids and a second of at least nine amino acids;
      - iii) include a third distinct segment of at least six amino acids; or
      - iv) comprise one of R355-L373, P378-L405, V407-D426, K428-D439, P441-V452, I454-G460, I465-T587, or N592-606; or
    - b) said polypeptide further comprises at least two distinct nonoverlapping segments of at least six contiguous amino acids of the extracellular portion of SEQ ID NO: 2;
  - 2) of Claim 4b, wherein:
    - a) said at least twelve contiguous amino acid segment comprises one of R355-L373, P378-L405, V407-D426, K428-D439, P441-V452, I454-G460, I465-T587, or N592-606; or
    - b) said polypeptide further comprises at least two distinct nonoverlapping segments of at least six contiguous amino acids of the extracellular portion of SEQ ID NO: 2; or
  - 3) of Claim 4c, further comprising a purification or detection epitope.
6. The polypeptide of Claim 4, which:
- a) consists of the mature sequence of Table 1;
  - b) is an unglycosylated polypeptide;
  - c) is from a human;
  - d) comprises at least 40 contiguous amino acids of SEQ ID NO: 2;

- e) exhibits at least three nonoverlapping segments of at least fifteen contiguous amino acids of SEQ ID NO: 2;
  - f) is a natural polymorphic variant of SEQ ID NO: 2;
  - g) has a length at least about 30 amino acids;
  - 5 h) exhibits at least two non-overlapping epitopes which are specific for a primate DCRS5;
  - i) has a molecular weight of at least 30 kD with natural glycosylation;
  - j) is a synthetic polypeptide;
  - k) is in a sterile form;
  - 10 l) is in an aqueous or buffered solution;
  - m) is attached to a solid substrate;
  - n) is conjugated to another chemical moiety; or
  - o) is physically associated with an IL-12R $\beta$ 1 polypeptide.
- 15 7. A composition comprising:
- a) a substantially pure polypeptide of Claim 4 combined with the IL-12R $\beta$ 1 protein; or
  - b) said polypeptide of Claim 4 and a carrier, wherein said carrier is:
    - i) an aqueous compound, including water, saline, and/or buffer; and/or
    - 20 ii) formulated for oral, rectal, nasal, topical, or parenteral administration.
8. A kit comprising a polypeptide of Claim 4, and:
- a) a compartment comprising said polypeptide;
  - b) a compartment comprising an IL-12R $\beta$ 1 polypeptide;
  - 25 c) a compartment comprising a p40, IL-B30, or p40/IL-B30 polypeptide; or
  - d) instructions for use or disposal of reagents in said kit.
9. A binding compound comprising an antigen binding site from an antibody, which specifically binds to said intracellular portion of said polypeptide of Claim 1, wherein:
- 30 a) said binding compound is in a container;
  - b) said polypeptide is from a human;
  - c) said binding compound is an Fv, Fab, or Fab2 fragment;
  - d) said binding compound is conjugated to another chemical moiety; or
  - e) said antibody:
    - 35 i) is raised against a peptide sequence of a mature polypeptide of Table 1;
    - ii) is raised against a mature DCRS5;

- iii) is raised to a purified human DCRS5;
  - iv) is immunoselected;
  - v) is a polyclonal antibody; luorescent label.
  - vi) binds to a denatured DCRS5;
  - 5 vii) exhibits a Kd to antigen of at least 30  $\mu$ M;
  - viii) is attached to a solid substrate, including a bead or plastic membrane;
  - ix) is in a sterile composition; or
  - x) is detectably labeled, including a radioactive or fluorescent label.
- 10 10. A kit comprising said binding compound of Claim 9, and:
- a) a compartment comprising said binding compound;
  - b) a compartment comprising:
    - i) a p40 polypeptide;
    - ii) an IL-B30 polypeptide;
    - 15 iii) a DCRS5 polypeptide; and/or
    - iv) an IL-12R $\beta$ 1 polypeptide;
  - c) a compartment comprising an antibody which binds selectively to:
    - i) a p40 polypeptide;
    - ii) an IL-B30 polypeptide;
    - 20 iii) a DCRS5 polypeptide; and/or
    - iv) an IL-12R $\beta$ 1 polypeptide; or
  - d) instructions for use or disposal of reagents in said kit.
11. A method of producing an antigen:antibody complex, comprising contacting
- 25 under appropriate conditions a primate DCRS5 polypeptide with an antibody of Claim 9, thereby allowing said complex to form.
12. The method of Claim 11, wherein:
- a) said complex is purified from other cytokine receptors;
  - 30 b) said complex is purified from other antibody;
  - c) said contacting is with a sample comprising an interferon;
  - d) said contacting allows quantitative detection of said antigen;
  - e) said contacting is with a sample comprising said antibody; or
  - f) said contacting allows quantitative detection of said antibody.
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13. A composition comprising:

- a) a sterile binding compound of Claim 9, or
- b) said binding compound of Claim 9 and a carrier, wherein said carrier is:
  - i) an aqueous compound, including water, saline, and/or buffer; and/or
  - ii) formulated for oral, rectal, nasal, topical, or parenteral administration.

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14. An isolated or recombinant nucleic acid encoding said DCRS5 polypeptide of Claim 1, wherein said:

- a) DCRS5 is from a human; or
- b) said nucleic acid:
  - 10 i) encodes an antigenic peptide sequence of Table 1;
  - ii) encodes a plurality of antigenic peptide sequences of Table 1;
  - iii) exhibits identity over at least thirteen nucleotides to a natural cDNA encoding said segment;
  - iv) is an expression vector;
  - 15 v) further comprises an origin of replication;
  - vi) is from a natural source;
  - vii) comprises a detectable label;
  - viii) comprises synthetic nucleotide sequence;
  - ix) is less than 6 kb, preferably less than 3 kb;
  - 20 x) is from a primate;
  - xi) comprises a natural full length coding sequence;
  - xii) is a hybridization probe for a gene encoding said DCRS5; or
  - xiii) is a PCR primer, PCR product, or mutagenesis primer.

25 15. A cell or tissue comprising said recombinant nucleic acid of Claim 14.

16. The cell of Claim 15, wherein said cell is:

- a) a prokaryotic cell;
- b) a eukaryotic cell;
- 30 c) a bacterial cell;
- d) a yeast cell;
- e) an insect cell;
- f) a mammalian cell;
- g) a mouse cell;
- 35 h) a primate cell; or
- i) a human cell.

17. A kit comprising said nucleic acid of Claim 14, and:
- a) a compartment comprising said nucleic acid;
  - b) a compartment comprising a nucleic acid encoding:
    - i) a p40 polypeptide;
    - ii) an IL-B30 polypeptide;
    - iii) a DCRS5 polypeptide; and/or
    - iv) an IL-12R $\beta$ 1 polypeptide;
  - c) a compartment comprising:
    - i) a p40 polypeptide;
    - ii) an IL-B30 polypeptide;
    - iii) a DCRS5 polypeptide; and/or
    - iv) an IL-12R $\beta$ 1 polypeptide;
  - d) a compartment comprising an antibody which selectively binds to:
    - i) a p40 polypeptide;
    - ii) an IL-B30 polypeptide;
    - iii) a DCRS5 polypeptide; and/or
    - iv) an IL-12R $\beta$ 1 polypeptide; or
  - e) instructions for use or disposal of reagents in said kit.
18. A nucleic acid which:
- a) hybridizes under wash conditions of 30 minutes at 30°C and less than 2M salt to the portion of SEQ ID NO: 1 encoding the intracellular portion; or
  - b) exhibits identity over a stretch of at least about 30 nucleotides to the intracellular portion of a primate DCRS5.
19. The nucleic acid of Claim 18, wherein:
- a) said wash conditions are at 45°C and/or 500 mM salt; or
  - b) said stretch is at least 55 nucleotides.
20. The nucleic acid of Claim 18, wherein:
- a) said wash conditions are at 55°C and/or 150 mM salt; or
  - b) said stretch is at least 75 nucleotides.
21. A method of modulating physiology or development of a cell comprising contacting said cell with:

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- a) an antagonist of p40/IL-B30 which is a complex comprising:
    - i) the extracellular portion of a primate DCRS5; and/or
    - ii) the extracellular portion of a primate IL-12R $\beta$ 1;
  - b) an antagonist of p40/IL-B30 which is an antibody which binds a complex comprising:
    - i) primate DCRS5; and/or
    - ii) primate IL-12R $\beta$ 1;
  - c) an antagonist of p40/IL-B30 which is an antibody which bonds to DCRS5;
  - d) an antagonist of p40/IL-B30 which is an antibody to IL-12R $\beta$ 1;
  - 10 e) an antagonist of p40/IL-B30 which is an antisense nucleic acid to DCRS5 or IL-12R $\beta$ 1; or
  - f) an agonist of p40/IL-B30 which is an antibody which binds a complex comprising:
    - i) primate DCRS5; and/or
    - 15 ii) primate IL-12R $\beta$ 1.

22. The method of Claim 21, wherein said contacting is with an antagonist, and:
- a) said contacting is in combination with an antagonist to:
    - i) IL-12;
    - 20 ii) IL-18;
    - iii) TNF; or
    - iv) IFN $\gamma$ ; or
  - b) said cell is from a host which:
    - i) exhibits signs or symptoms of a chronic Th1 mediated disease;
    - 25 ii) exhibits symptoms or signs of multiple sclerosis, rheumatoid arthritis, osteoarthritis, inflammatory bowel disease, diabetes, psoriasis, or sepsis; or
    - iii) receives an allogeneic transplant.

- 30 23. The method of Claim 21, wherein said contacting is with an agonist, and:
- a) said contacting is in combination with:
    - i) IL-12;
    - ii) IL-18;
    - iii) TNF; or
    - 35 iv) IFN $\gamma$ ; or
  - b) said cell is from a host which:

- i) exhibits signs or symptoms of a chronic TH2 response;
- ii) suffers from a tumor, viral, or fungal growth;
- iii) receives a vaccine; or
- iv) suffers from an allergic response.